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FOREST INSECT CONDITIONS

IN THE NORTHERN REGION

1961

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U.S. DEPARTMENT OF AGRICULTURE, FOREST SERVICE

DIVISION OF STATE AND PRIVATE FORESTRY

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COVER PHOTO: Young Douglas-fir stand defoliated by spruce budworm.

U. S. DEPARTMENT OF AGRICULTURE - FOREST SERVICE
Division of State & Private Forestry
Region 1
Missoula, Montana

FOREST INSECT CONDITIONS

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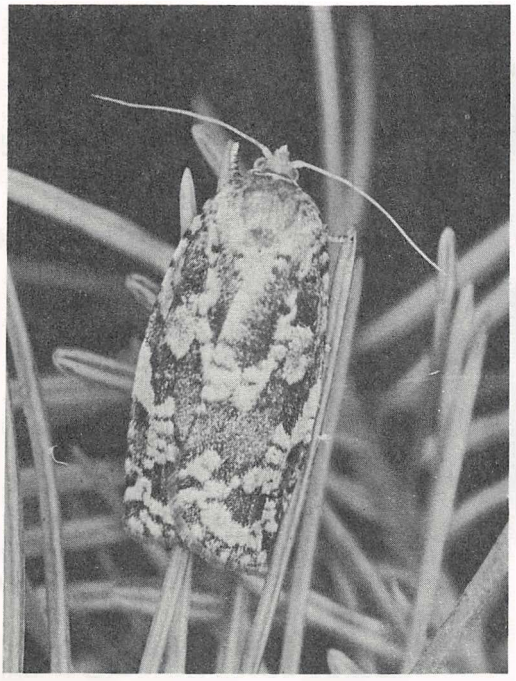
Division of State & Private Forestry

Conditions in Brief

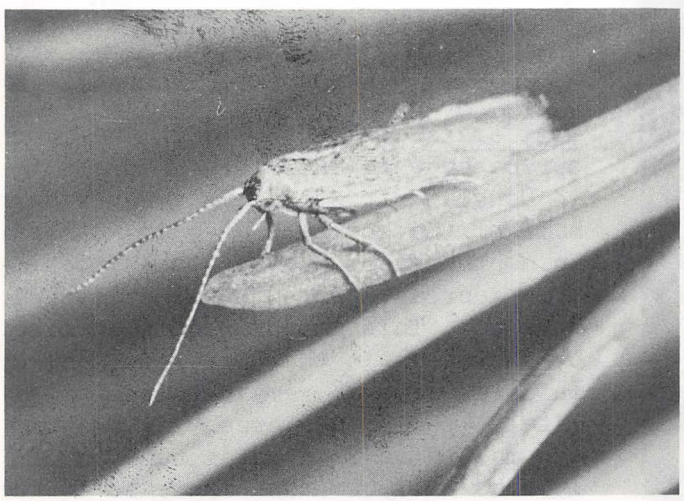
Forest insect activity increased in the Northern Region in 1961. Spruce budworm infestations in Montana remain at a high level with an increase in insect population. Larch casebearer continued its spread in Idaho and invaded Montana. Douglas-fir tussock moth was epidemic in two areas in Idaho. Mountain pine beetle continued destruction in old-growth western white pine. Ips beetle outbreaks were wide-spread and were particularly destructive in Northern Idaho and Central Montana.



Budworm moth on Douglas-fir foliage.

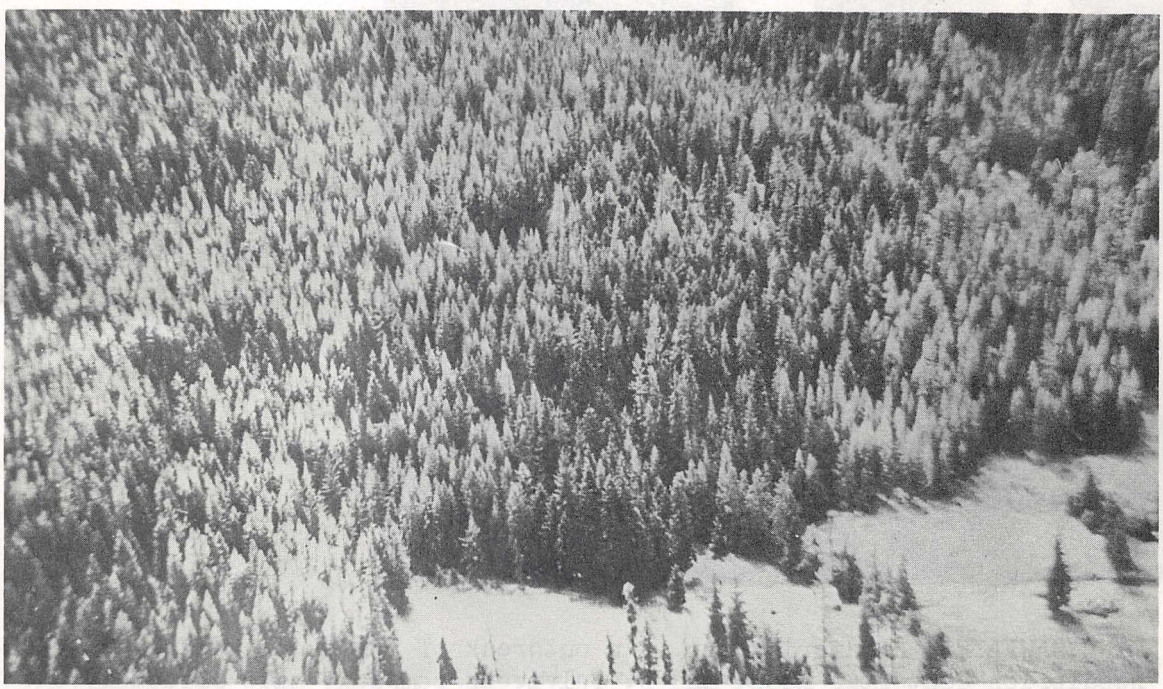
SPRUCE BUDWORM, Choristoneura fumiferana Clem. Foliar damage from spruce budworm increased in severity in Douglas-fir stands in the northern half of the outbreak area in Montana. In southwestern Montana, the infestation decreased both in intensity and acreage. This improvement was offset by increases in the Bitterroot Valley. Infested acreage remained at approximately $4\frac{1}{2}$ million acres, but budworm egg masses were twice as numerous in 1961 as in 1960. The increase in budworm egg masses means heavy defoliation can be expected in 1962. There is no indication of a decline in the budworm outbreak that has remained epidemic for 14 years.

Douglas-fir foliage from sample plots is carefully examined for spruce budworm egg masses. In six weeks this crew found more than 17 thousand egg masses.

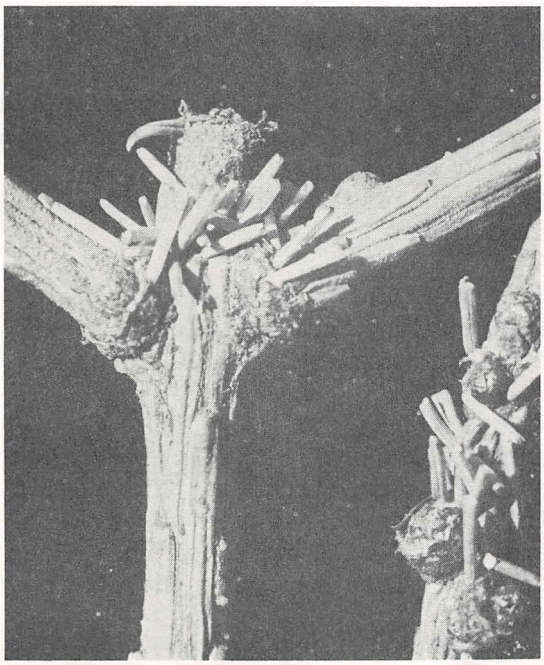


Larch casebearer moth on larch needle.

LARCH CASEBEARER, Coleophora laricella (Hbn.). Larch casebearer was first discovered in the west during the summer of 1957 near St. Maries, Idaho. When the discovery was made, at least 15,000 acres of western larch host type showed visible defoliation. When the first comprehensive survey was made in 1958, the casebearer was found established in larch stands over a 4,000 square mile area. By 1961, the insect had spread to larch stands in an area of 9,000 square miles and had invaded Montana. Visible damage seen from the air covers 700 square miles. The casebearer will eventually spread to all the larch stands in the region.

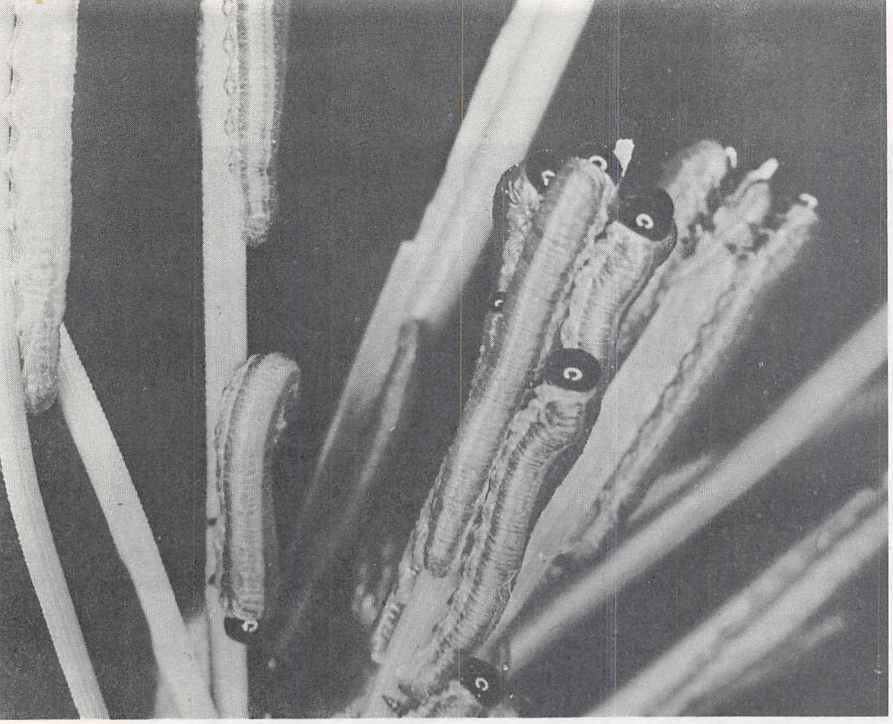


Young larch stand showing typical defoliation, St. Joe National Forest.



Larch casebearer larvae overwintering in cases made from needles.

In the eastern states a biological balance has been established between the casebearer and its parasitic enemies. Infestations there do little damage. Shipments of braconid parasites, Agathis pumila, were obtained from the northeastern states in 1960 and liberated near St. Maries, Idaho, to establish biological control in this region. More shipments of parasites are planned in 1962 for liberation over a larger area and to establish a local source of parasites for wide-spread distribution.



Left: Pine sawfly larvae feeding on ponderosa pine foliage.

PINE SAWFLIES, Neodiprion spp. An outbreak of two species of sawflies, Neodiprion contortae Ross, and N. fulviceps complex, have seriously defoliated 6,000 acres of lodgepole and ponderosa pine in north central Montana since 1958. Larval forms collected in 1961 died during rearing, of what was tentatively determined as polyhedrosis. Later, field examinations indicated that the disease had reduced the larval population. A fall survey showed the over-wintering egg population to be very light. The outlook for 1962 is light defoliation in all areas.

DOUGLAS-FIR NEEDLE MIDGE, Contarinia sp. Infestations of this needle midge are a serious problem to the Christmas tree industry in western Montana and northern Idaho. The area infested increased greatly in 1961. Heavy infestations extend from Riggins, Idaho, northeastward into Montana. Light infestations occur east of the Continental Divide.

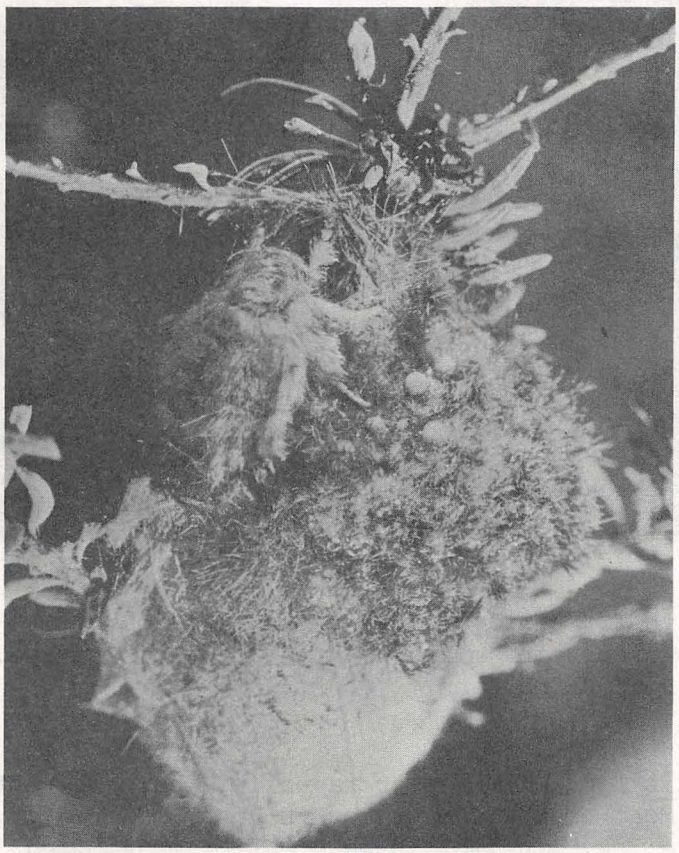
LARCH SAWFLY, Pristiphora erichsonii (Hartig). The only active infestation known is in pole-sized stands of western larch in the Olsen Creek drainage, St. Joe National Forest, Idaho. Approximately 1,100 acres are infested.

LARCH BUD MOTH, Zeiraphera griseana (Hubner). In 1955 - 1957, larch bud moth infested an estimated 250,000 acres of western larch in this region. The outbreak subsided and no areas of infestation were again observed until 1961. About 500 acres of larch are now heavily infested near Tony Peak, Kootenai National Forest, Montana. This may mark the start of another outbreak period.

GELECHIID MOTH, Gelechiidae, unknown spp. Two outbreaks of this unidentified moth in lodgepole pine were recorded in 1961. Defoliation occurs in the terminals of the trees. In the Gallatin National Forest, Montana, 3,500 acres are infested. Samples of defoliated lodgepole pine were also received from Yellowstone National Park, Wyoming.

DOUGLAS-FIR TUSSOCK MOTH, (Hemerocampa pseudotsugata McD.). Localized outbreaks of this defoliator occurred in Moscow, Clarks Fork, and Bonners Ferry, Idaho. Several species of fir and spruce were infested. Isolated groups of infested trees were found in a twenty square mile area near Bonners Ferry, mostly in farm woodlots. Some owners sprayed their trees with insecticide to control the pest.

An analysis of egg masses collected in each locality indicated an increasing infestation in all but the Moscow area.

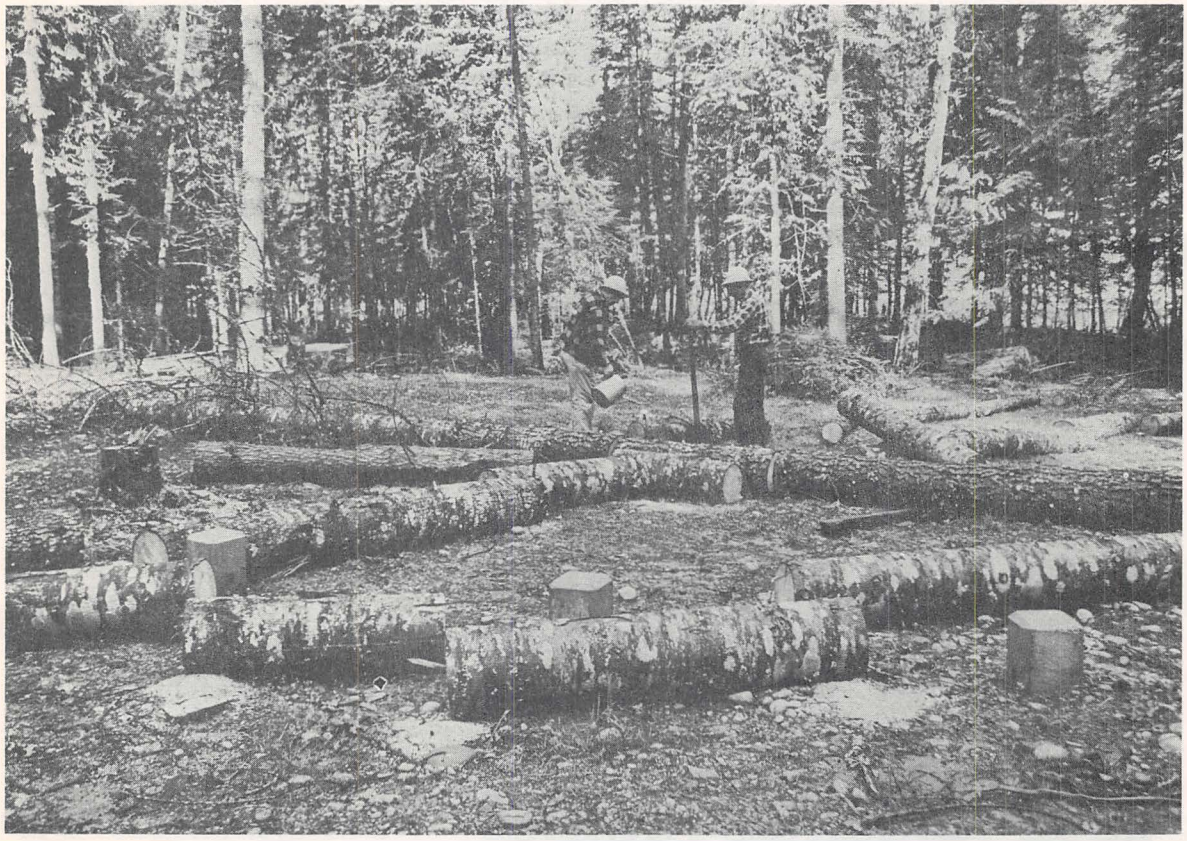


Left: Douglas-fir tussock moth laying her eggs on the cocoon from which she emerged. Note that the females are wingless.

LODGEPOLE NEEDLE MINER, Evagora milleri (Busck). An outbreak of this needle miner was discovered in the Big Belt Mountains, Helena National Forest, Montana. About 4,500 acres of lodgepole pine were infested. Samples of foliage collected in the fall showed very few overwintering larvae.

CALIFORNIA TORTOISE-SHELL BUTTERFLY, Nymphalis californica (Bdr.). Nearly 2,000 acres of Ceanothus were completely defoliated by this insect in the Kaniksu National Forest, Idaho.

PANDORA MOTH, Coloradia doris Barnes. Numerous adult pandora moths were collected by light trapping in the Long Pines Division, Custer National Forest, Montana. There was no visible evidence of defoliation.



Treating grand fir infested with fir engraver beetle on the Nezperce National Forest. Orthodichlorobenzine mixed with fuel oil was sprayed on the infested boles with sprinkling cans.

FIR ENGRAVER, Scolytus ventralis Lec. The fir engraver is a chronic pest in true firs in this region. Most of the damage occurs in subalpine fir, where the commercial values are low. In 1961 large areas of red-topped subalpine fir were observed in Montana.

Early in the season, a small control project was undertaken in Idaho on the Nezperce National Forest to suppress a fir engraver beetle infestation in a large public campground. In the Clearwater Forest, Idaho, about 100 trees were logged in a grand fir management area to suppress an engraver beetle outbreak; this work is still in progress.

MOUNTAIN PINE BEETLE, Dendroctonus monticolae Hopk. Mountain pine beetle infestations in old-growth western white pine continue to be a problem in northern Idaho and western Montana. A recently completed survey of 41,000 acres of white pine type in the Clearwater National Forest, Idaho showed the loss of timber from the beetle to be approximately 15.5 million feet board measure in 1960, and 13.2 million feet in 1961. This damage has

persisted for a long period. Data taken in 1938 compared to the current survey results show that the loss of mature timber has been 40 percent of the stand during the past 24 years.

In Montana, remnants of older infestations of the beetle persist in lodgepole pine at Kintla Lake, and in the Park Creek drainage in Glacier National Park.

DOUGLAS-FIR BEETLE, Dendroctonus pseudotsugae, Hopk. Periodic outbreaks of the Douglas-fir beetle have probably killed more trees in the Northern Region than any other insect. The outbreaks seem to occur at 7 to 9 year intervals. The latest outbreak peak occurred in 1959 - 1960. Currently beetle activity is at a low point. There are but three epidemic infestations known in the region.

ENGELMANN SPRUCE BEETLE, Dendroctonus engelmanni Hopk. There are still some "hot-spot" infestations of the Engelmann spruce beetle in and adjacent to cutover areas. Most of these are due to blowdowns on the periphery of clear-cut blocks. Cull logs also may produce sufficient brood for green tree attacks. Logging-for-control continues on the Kaniksu, Kootenai and Flathead National Forests.

PINE ENGRAVER BEETLES, Ips spp. An unusually long activity period in 1961 appeared to favor pine engraver beetle infestations. On the Nezperce National Forest, Idaho, several species; Ips oregonis, Ips plastographus, and Ips interpunctus, infested large groups of ponderosa pine. Thousands of trees were killed. Other infestations occurred farther north where Ips attacked large areas of lodgepole pine.

In Montana, the western six-spined Ips, Ips ponderosae Sw., developing in slash and snow damaged ponderosa pine, has become epidemic. An area of about 130,000 acres in the Crow and Northern Cheyenne Indian Reservations is heavily infested. Groups of 100 or more immature red-topped trees are common. Larger trees are also attacked, but in smaller groups.

WESTERN PINE BEETLE, Dendroctonus brevicomis Lec. The western pine beetle has become more active in the Northern Region in recent years.

Groups of ponderosa pine were infested by the beetle in the Nezperce National Forest, Idaho, where several hundred trees were attacked in the Berg Creek sale area alone. Thousands of acres have groups of red-topped trees attacked by western pine beetle in the lower tree bole and by several species of Ips beetles in the top. The area of infestation extends from Riggins to Kooskia, Idaho.